DOCUMENT RESUME

ED 360 314 SP 034 828

AUTHOR Lieb, Barbara, Comp.
TITLE Achieving World Class Standards: The Challenge for Educating Teachers. Proceedings of the OERI Study Group on Educating Teachers for World Class Standards (Washington, D.C., March 22-24, 1992).
INSTITUTION Office of Educational Research and Improvement (ED), Washington, DC. Programs for the Improvement of Practice.
REPORT NO ISBN-0-16-041698-1; PIP-93-1217
PUB DATE Mar 93
NOTE 59p.
AVAILABLE FROM U.S. Government Printing Office, Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328.
PUB TYPE Collected Works - Conference Proceedings (021)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Academic Standards; *Change Strategies; *Educational Policy; *Educational Practices; Elementary Secondary Education; *Excellence in Education; Futures (of Society); Higher Education; Program Evaluation; *Program Improvement; Teacher Education Curriculum; *Teacher Education Programs
IDENTIFIERS *Reform Efforts

ABSTRACT

In the spirit of education reform, American education is challenged as never before to meet higher standards of teaching and learning. In order to respond to these challenges, the Office of Educational Research and Improvement convened a study group representing a cross section of individuals and organizations interested in the education of teachers. Ideas and recommendations discussed by the study group centered around six issues: (1) the kind of teaching needed to achieve world class standards; (2) problems in educating teachers for world class standards; (3) teacher education issues specific to core subject areas; (4) needed changes in policies and practices in educating teachers; (5) the potential of current reforms to facilitate needed changes; and (6) recommendations for educating teachers for world class standards. This report includes the following presentations: "What Kind of Teaching Do We Need for World Class Standards?" "What Problems Must be Solved in Educating Teachers for World Class Standards? "How Will Changes in the Core Subject Areas Affect the Education of Teachers?" "What Changes Are Needed in Policies and Practices That Affect the Education of Teachers?" and "Will Current Reforms Contribute to the Changes Needed?" Two appendices provide a meeting agenda and a list of speakers and participants. (LL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED360314

THE CHALLENGE FOR EDUCATING TEACHERS

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

SP 034 828

BEST COPY AVAILABLE

ACHIEVING WORLD CLASS STANDARDS

THE CHALLENGE FOR EDUCATING TEACHERS

Proceedings of the
OERI Study Group on
Educating Teachers for World Class Standards

Washington, DC
March 22–24, 1992

Compiled by Barbara Lieb

U.S. Department of Education
Richard W. Riley
Secretary

Office of Educational Research and Improvement
Emerson J. Elliott
Acting Assistant Secretary

Programs for the Improvement of Practice
Eve M. Bither
Director

March 1993

For sale by the U.S. Government Printing Office
Superintendent of Documents, Mail Stop: SSOP, Washington, DC 20402-9328
ISBN 0-16-041698-1

Preface

American education faces new challenges in a world where rapid political and economic change has become the norm rather than the exception. For the first time in our history, we are called upon to educate all youngsters and to prepare them to live and work in a world transformed by new technologies, demographic shifts, and economic globalization. In the face of these and other ongoing revolutions, the future seems indeterminate. We cannot be sure what the nature of work will be in the future, nor can we be sure which occupations will exist or what job skills will be needed. Given the certainty of uncertainty, educators must equip young people with the experiences and knowledge and skills that will empower them to keep on learning for the rest of their lives.

As American society changes, so must American education. Teachers are now faced with the challenge of educating all children, regardless of their background or their presumed destination. Given the changing nature of the economy and the changed nature of higher education, we can no longer safely predict who is "college-bound" and who is not. At one time or another, nearly all Americans will engage in some form of postsecondary education. The traditional organization of schools--or at least the organization that dictates the division of students into "tracks" based on whether they intend to go to college or work--is inadequate to the new conditions of American life. We must think instead about what is needed to prepare all Americans for the challenge of responsible citizenship, work, and life in a global economy.

As a result of their schooling, all children should have full command of the skills of reading, writing, thinking, speaking, and listening. All children should experience and savor the great literature of our culture and other cultures; all children should understand the historical events and trends that have transformed the world. All children should be enabled to use and understand the powerful tools and concepts of mathematics and science to reason and to solve problems. All children should participate in and learn about the arts. All children need to understand how our government works, how it changes, and how they can participate as citizens. All children need to understand how all of us are shaped by the constraints of culture, geography, and our environment. And all of these different kinds of knowledge and understanding should give young people the power to direct their own lives and to pursue lifelong learning.

Our educational system is challenged as never before to meet higher standards of teaching and learning. In the past, large numbers of children did not attend school, or left school before graduating, or received an education that limited their possibilities. Now we must aim for success for all children,

a goal that is daunting indeed. Can it be done? There are many who say that such a goal will always be beyond our grasp, for various reasons, and is therefore not worth pursuing. For my part, I cannot think of any goal that is as worthy of the efforts of educators, nor one that is more challenging. Having led the world in the provision of mass education for most of our nation's history, American educators must now aim to prove that excellence and equity are not in conflict, that our diversity is our strength, and that we can rise to the challenge of providing excellence for all.

Clearly, we cannot pursue this vision unless we have teachers who are prepared to teach to "world class standards" in mathematics, science, English, history, geography, the arts, civics, and other subjects. Teachers must bring to the classroom a deep and rich understanding of their subject matter, a thoughtful understanding of how children learn, and a commitment to the success of all their students. Our teacher education institutions must transform themselves, in order to support the kind of learning that new teachers must engage in. Their own faculty must model the knowledge and behaviors that support excellence in teaching.

These are mighty challenges. To explore how teacher education might respond to them, the Office of Educational Research and Improvement (OERI), U.S. Department of Education, convened a study group in Washington, D.C., on March 22-24, 1992.

The 58 study group participants represented a cross section of individuals and organizations interested in the education of teachers. They included teachers (K through 12), school administrators, policymakers, teacher educators, university subject-matter professors and administrators, and leaders of educational associations, foundations, and organizations.

Study group members participated in plenary sessions and in small group discussions that examined issues and formulated recommendations from important perspectives: state-level; district and school-level; system-level; institutions of higher education; professional organizations; research and assessment.

This report discusses major ideas and recommendations of the study group around six issues:

- The kind of teaching needed to achieve world class standards;
- Problems in educating teachers for world class standards;
- Teacher education issues specific to the core subject areas;

- Needed changes in policies and practices in educating teachers;
- The potential of current reforms to facilitate needed changes; and
- Recommendations for educating teachers for world class standards.

The participants in this study group spent long hours debating the critical issues facing teacher education. They recognized that grand ideas in education will flounder unless teachers support them and are prepared to implement them. They recognized that many things must change in education if this vision is to be realized, not only teacher education. The recommendations of the study group deserve careful consideration by teachers, teacher educators, administrators, and policymakers across the nation.

Recommendations

The need for systemic change in education was a dominant theme of the meeting. Participants emphasized that reforming teacher education must occur simultaneously with the process of reforming schooling. Moreover, in order to sustain the process of renewal we will need collaboration and innovation, as well as a "moral stewardship" of educators for providing excellent education.

Participants recommended changes in those components of the education system with primary responsibilities for the ongoing education of teachers--state education agencies, local districts and schools, institutions of higher education, and professional organizations. They also recommended needed research on issues in educating teachers and ways that the U.S. Department of Education could facilitate the process of systematic change.

State Education Agencies

- Facilitate consensus among educators and the public on world class standards and their implications for teaching.
- Organize consortia for sharing information on higher standards and related assessments and on teacher certification and licensing.
- Support networks and systems that assist teachers in using new standards.
- Revise licensing processes to emphasize strong content knowledge as well as the ability to teach.
- Require teachers to develop portfolios demonstrating their teaching abilities in connection with continuing their licenses to teach.
- Support teacher education programs that emphasize collaborative relationships among university and school staffs and clinical teaching experiences with diverse student populations.
- Support efforts to improve the quality of teaching in institutions of higher education, especially in programs related to the preparation of teachers.
- Support initiatives that include teachers as members of research teams.
- Require external reviews of schools of education in conjunction with a nationwide system of standards for accreditation.

Districts and Schools

- Promote shared understandings and a community of learning among parents and education professionals on issues in achieving world class standards.

- Develop internal agreement within the district, and within each school on instructional objectives and purposes of assessment.

- Support mentoring programs that strengthen teachers' knowledge of content as well as pedagogy.

- Provide resources--space, time, expert consultants--to help teachers learn and collaborate about ways of achieving world class standards.

- Support professional development, including leadership skills for administrators to enable them to implement new standards.

- Support participation by teachers in the creation of ongoing professional development programs.

- Strengthen the process for selecting new teachers by:

    - Developing criteria that reflect high standards, especially for subject matter areas;

    - Involving school level administrators and teachers from the content area or grade level in which the person will teach; and

    - Publicizing selection criteria in order to "market for quality."

Institutions of Higher Education

- Develop strong liberal arts programs as prerequisites for teacher education.

- Involve arts and science faculty in improving teacher education through:

    - Promoting better connections between general education programs and content and methods courses in teacher education;

    - Integrating ideas for teaching within specific disciplines into the disciplinary courses themselves;

- Providing incentives for faculty to become involved in educating teachers, for example, by defining scholarship to include research and theories on the teaching of a specific discipline; and

- Rethinking current distinctions in subject matter preparation of elementary school and secondary school teachers (e.g., some elementary school teachers may need to be specific subject matter specialists).

- Improve the quality of teaching throughout higher education by:

  - Promoting peer review of college teaching, including examination of course syllabi and teaching portfolios, and

  - Systematically evaluating teaching performance and using the results to improve the quality of instruction.

- Improve professional development components of teacher education programs by:

  - Supporting the continued professional development of teacher education faculties;

  - Providing supervised clinical experiences beyond student teaching to extend professional development after graduation;

  - Encouraging in prospective teachers a sense of responsibility for important decisions in schools and districts;

  - Encouraging continued contact with the university, for example, through auditing of courses by classroom teachers; and

  - Organizing learning experiences to develop collegiality among college faculty and classroom teachers.

Professional Organizations

- Involve teachers in critical aspects of education reform by:

  - Establishing standards and assessments of student and teacher performance at school, state, and national levels;

  - Restructuring schools to facilitate, encourage, and ensure high standards;

- Participating in decisions affecting preservice and inservice education, mentoring, and advanced professional development;

- Encouraging local teachers associations to support restructuring of schools and to develop rewards and incentives to support change; and

- Supporting subject area associations' efforts to establish standards-related teacher education and licensing programs.

- Lead and encourage collaborative efforts to reform teacher education, including:

  - Collaborating across professional organizations to develop general and subject-specific pedagogical methods;

  - Collaborating with other education stakeholders to achieve consensus and consistency of policy and message on educating teachers for higher student achievement;

  - Encouraging collaboration among education and government, business, parents, the community, researchers, subject area specialists, and others on issues related to educating teachers;

  - Working with textbook publishers and other suppliers of educational materials to develop tools and resources for teaching to world class standards;

  - Encouraging politicians to coordinate and work together across their various interests for the improvement of education; and

  - Using new technologies for educating and encouraging collaboration among teachers.

U.S. Department of Education

- Provide support for networking, communication, and collaboration among various levels and parts of the education system to improve the education of teachers, including:

  - Facilitating collaboration on standards and instruction among content area specialists, teacher educators, and classroom teachers;

- Providing forums for discussing world class standards among the public, policymakers, and the education community; and

- Establishing an electronic network on education that is easily accessible by schools and teachers.

- Support innovative efforts for individuals and agencies working to overcome resistance to change on the part of educators.

- Support projects that establish and study the effectiveness of professional development schools.

- Support efforts to develop professional teaching standards for initial licensure and for advanced certification of teachers.

- Support and disseminate research on the connection between new subject area standards and assessment of student learning.

Researchers

- Conduct research to test the influence of world class standards on improving teacher education, teaching, and student achievement, including:

  - Research on how teachers, students, parents, and university faculty come to understand and to implement the standards; and

  - Scholarly analysis of the content and standards selected in new subject area frameworks and their relationships to existing student and teacher assessment procedures.

- Conduct research on characteristics of excellent teacher education, excellent teaching, and of high levels of student achievement in order to better define needed reforms, including:

  - Research on successful teachers and how they become educated;

  - Research on models of productive collaboration among arts and science and education faculty to distinguish between real barriers and those that are myths; and

  - Research on the "language"--metaphors, images, representations--that disciplinary experts use to communicate with each other in order to facilitate communication across disciplinary boundaries.

Contents

Preface iii

Recommendations vii

Introduction 1

What Kind of Teaching Do We Need for World Class Standards? 5

What Problems Must Be Solved in Educating Teachers for World Class Standards? 11

How Will Changes in the Core Subject Areas Affect the Education of Teachers? 17

What Changes Are Needed in Policies and Practices That Affect the Education of Teachers? 23

Will Current Reforms Contribute to the Changes Needed? 25

Conclusion 29

Appendices 31

Appendix A: Agenda 31

Appendix B: Speaker and Participant List 41

Acknowledgments 53

This study group met in March of 1992. Therefore, the titles and names of officials listed in this report reflect their status at that time.

Introduction

In setting the context for the meeting on educating teachers for world class standards, Francie Alexander, Deputy Assistant Secretary of OERI, described the standards movement as a major revolution marking a shift in focus from "inputs" to "outcomes" in education. Raising standards provides a renewed emphasis on content and will also be a catalyst for designing a system to assess what American students know and do in challenging subject matter. While standards are not a "silver bullet" or "cure all," emphasized Alexander, "they will help us to focus on needed systemic change, to target limited resources, and to enhance professionalism."

Alexander described national standards as having important implications for the subject matter that teachers will be expected to know. For example, although the new standards from the National Council of Teachers of Mathematics call for elementary school teachers to introduce students to concepts of geometry, probability and statistics, and algebra, she noted that the majority of teachers surveyed in a national assessment reported no course work in these areas. Data from the National Center for Education Statistics indicate that education majors have, on average, lower GPAs in every field outside of education than most noneducation majors.

Citing research from the National Center for Research on Teacher Learning, Alexander noted that helping teachers better understand their subject matter also has implications for achieving equity and excellence in education. Approaches that helped teachers better understand their subject matter enabled them to link subject matter to individual students, representing a wide range of diversity. Such approaches were more effective than those that presented explicit knowledge about different cultural groups, since these actually tended to reinforce cultural stereotypes rather than to provide the basis for linking to individuals.

Higher curriculum standards, according to Alexander, can lead to higher standards in teacher education. As an example, Alexander cited the new Minnesota plan for teacher preparation and licensing based on demonstration of teaching outcomes. When fully in place, each teacher candidate will be expected to pass three different examinations to become a full-fledged teacher, including a performance-based final examination to receive a teaching license.

Concluded Alexander, "teacher education will have to undergo fundamental change if it is to succeed in light of the new responsibilities thrust upon it and contribute to 'the quiet intellectual revolution' represented by the movement toward national standards."

Diane Ravitch, Assistant Secretary for OERI, emphasized that if students are to achieve at higher levels, teachers must possess a deep understanding of subject matter and must also understand what motivates children. "The best motivational device for our kids," she said, "is to engage them in problems that they want to solve and that encourage them to use mathematics and science for their own reasons."

Ravitch reminded the group of the relevance of Jerome Bruner's dictum that any subject can be taught in an intellectually valid fashion to anyone of any age if the teacher understands the subject and understands the learner. Her examples included a lesson that she witnessed in an inner-city high school in San Francisco that was using the NCTM standards. The lesson, a 3-week unit called "The Pit and the Pendulum," began with students reading the Edgar Allan Poe short story of the same title. In it, a man is tied to a table with a blade slowly descending. He figures out a plan of escape as the blade has only 12 more swings left. The problem posed to the students is: how long will it take the blade to swing 12 more times? Does he have time to escape? Working in mixed-ability groups, students used calculators, protractors, weights, measures, and string to figure out their answer. At the end of the unit, they construct a 30-foot pendulum, with a bowling ball on the end, and see how their calculations match reality. Ravitch pointed out that the students were not gifted nor necessarily college bound, but they were very excited. In this way, they learned more complicated kinds of algebra, geometry, calculus, and physics than they would have in their regular class. Rates of attendance and engagement were improved, and none of the students had dropped out.

"I think that we are really in a whole new phase in American education when we begin to introduce this kind of learning to average kids and to expect all kids to learn, as we have not in the past," she said.

Describing the many new approaches she has seen around the country, Ravitch emphasized that the best way to learn to teach is to see it exemplified and modeled by people who do it very well.

In discussing curriculum reform, Ravitch noted an error of the 1960s when there was collaboration among scholars, but when the teacher education community was left out and there was failure to translate many reforms into practice. She expressed hope for current reforms embodied in the national standards that are being developed, with support from OERI, in science, history, and other subjects. State curriculum frameworks based on the standards will provide a vision for teachers and teacher educators of what children should know and be able to do, from kindergarten through 12th

grade. They can serve as the engine behind nationwide efforts to reform the education of teachers, curriculum materials, and better assessments. The Assistant Secretary closed with a challenge to participants to help OERI shape the agenda for preparing teachers to teach to world class standards.

What Kind of Teaching Do We Need for World Class Standards?

Lee Shulman of Stanford University explored how a national system of standards and associated assessments--if properly crafted, negotiated, reviewed, and revised--ought to affect the national vision about teachers and teaching.

The new standards and assessments, he said, will comprise a set of curriculum frameworks that support and guide teachers' work but do not dictate daily activity. He postulated, too, a system of bottom-up assessments linked to the standards but not fixed to them in some rigid testing technology.

"The assessments are flexible but not chaotic or local in an irresponsible sense," he remarked. Increasingly, he said, they will be integrated into the daily tasks of teaching. He described them as resembling performance assessments. portfolios, carefully documented projects more than traditional examinations.

Shulman described the new assessments as an enlightened version of advanced placement, an integral part of the instruction, responsive to an outside set of standards toward which the teacher and students would work collaboratively. The kind of teaching involved in enabling students to meet world class standards is enormously demanding, said Shulman.

Teachers Need In-Depth Understanding of Subject Matter

"Accomplishing higher order goals . . . in the core subject areas requires of the teachers an increasingly deep and flexible understanding of subject matter," said Shulman. That understanding will not be significantly less for elementary than for secondary teachers."

"If we expect teachers to encourage students to explore and to probe, to offer hypotheses and explanations, to essay interpretations and critical evaluations, we ask them to increase the essential complexity and unpredictability of the classroom environment," he explained.

"If the teachers are to respond intelligently, sensitively, to the variety of things that kids produce," Shulman noted, their subject matter understanding will have to be deep and flexible.

For teachers to develop the depth and flexibility that are essential to address seriously the new standards and assessments, Shulman explained,

radical revisions of the higher education curriculum will have to be ensured in the areas in which these standards apply, not only in the curriculum but also in how the curriculum is taught in colleges and universities. In discussing the challenges to teacher education, Shulman described studies in California on implementation of the frameworks. These demonstrate that even the most motivated teachers may "go through all the right moves with the manipulatives and with what looks like problem solving," but they don't necessarily know mathematics or mathematical pedagogy. He added that while most of the causes of failure lie in the higher education community, there are also problems in those curriculum frameworks that result from compromises, rather than thoughtful deliberation. Frameworks must be continuously revised on the basis of the experiences of teachers working with them in practice.

Shulman concluded that the kind of teaching needed is "going to involve learning to think and wrestle and respond and react about subject matter in profoundly pedagogical ways."

In discussing differences between the American system of education and some Asian systems, Harold Stevenson of the University of Michigan described Asian teachers' subject matter understanding as outstanding. Their ease in moving from student response to explanation to feedback was quite remarkable. He understood better how they achieved it when the school superintendent of Sendai, Japan, told him that high school math teachers in Sendai constitute the top 10 percent of those majoring in the subject at the university.

Teachers Must Model an Investigative Spirit

Carol Greenes, Associate Dean and Professor of Mathematical Education at Boston University, noted that in addition to the big ideas found in the various core areas there were "habits of the mind" or common processes. In math, there is reasoning, problem solving, and communicating; history is now presented as an investigative discipline and not a corpus of facts; English looks at reading, writing, speaking, and listening as unified processes having common elements of questioning and formulating, arranging, and communicating ideas. She identified these as the "investigative spirit" that cut across core areas.

A teacher must model this investigative process, said Greenes, "in guiding, coaching, in acting as a resource," and in selecting applications of big ideas. For example, in her own teaching of ninth graders in Chelsea, Greenes talked to them of meeting Manute Bol, the National Basketball Association's tallest player, in Chicago at a conference. She told them of wondering whether, at his height of 7 feet, 7 inches, he might be able just to reach up

and put the basketball into the basket rather than throwing it. The young people enthusiastically tackled the problem. When one of the students suggested telephoning Bol to ask him how far up he must reach, Greenes pointed out that the answer could be determined by using the mathematics of proportionality. The students first measured themselves and determined that the ratio between height and arm length was nearly identical for all of them. Then they calculated his arm length using his height and the ratio they had discovered. From then on, the students understood better the principles of proportionality, calling it "Manute Bol mathematics."

"The teacher has to dramatize the power and the importance of the big ideas [such as proportionality] by connecting instances of the idea within and across disciplines, and selecting applications that intensely engage students and capitalize on events or create them," she commented.

Teachers Must Interact With Others About Teaching

Some of the demands on a typical American teacher can be a serious obstacle to teaching to world class standards. When teachers in China compared their 2- to 4-hours per day teaching schedule with the all-day requirements of an American, they were astounded. They asked Harold Stevenson when their American counterparts had time to prepare to teach, to consult with other teachers, to work with individual children.

The fact is, said Stevenson, that "we are overtaxing teachers, . . getting them too fatigued, too burned out. We're not getting the kind of innovative, responsive teaching that we need. "In an Asian classroom . . . the teacher comes in with an intensity, a degree of preparation and organization that is very difficult to find in American schools." Stevenson suggested restructuring the time teachers spend at school so that they will have time for teaching innovations.

Stevenson also advocated a teacher training model much like medical school, where the basic information is acquired in the first couple of years. After taking basic courses in education and courses in their subject matter, the experience is an interactive process involving being with excellent teachers, seeing good models, practicing, and obtaining the kind of reaction that enables students to improve their teaching.

In interviewing American teachers Stevenson found that they are often lonely, that the door is closed to people outside the classroom, and that there are no teachers' rooms that provide opportunities for professional interaction. With the kind of education and the minimal feedback that teachers get now, especially in their beginning years of teaching, it is difficult for them to learn

the skills of pedagogy, Stevenson commented. In contrast, in Japan, beginning teachers are given a mentor, a very skilled teacher who observes the beginner for 20 hours during the teachers' first year and then counsels the beginner about improvement.

"The way you learn how to be a really exciting teacher is in your own classroom being observed and responded to by skilled mentors. We need this continuous collaboration among teachers throughout a teacher's career. It is a matter of being constantly evaluated and stimulated by your peers within your school, within your city, within your state," Stevenson stressed.

Mary Bicouvaris, a teacher of government and international studies at Hampton Roads Academy in Virginia, reinforced Stevenson's remarks, noting, "the climate for collaboration has not been nurtured, neither by the bureaucracy of the school system, nor by society, nor by the colleges of education, nor anyone. High profile teachers who do good things in their classrooms . . . are embarrassed to stand up and say, I am doing something good. Nobody expects them to do that."

Teachers Must Have a Clear Focus on Educational Outcomes

Several speakers emphasized the need to focus on the outcomes of education. Carol Greenes noted that despite numerous reports--such as those of the National Council of Teachers of Mathematics, the Curriculum and Evaluation Standards for School Mathematics, and the American Association for the Advancement of Science's *Project 2061: Science for All Americans*--we really haven't done the hardcore job of deciding what it is we want students to learn. Quoting the AAAS *Project 2061,* that "our curricula . . . are overstuffed and undernourished," Greenes emphasized that we must identify the big ideas in mathematics and science, the social sciences, and the English areas.

Examples of such ideas she cited in math included function, proportionality, and mathematical structures; in science, they were equilibrium, evolution, and structure of matter; in history, they included cause and effect, the individual in a society, and ownership of property.

Stevenson reported that his studies of teachers in China and Japan showed that they believed the goal of teaching is clarity, having one's message understood. American teachers, however, usually consider sensitivity their major objective. Building up a child's self-esteem through sensitivity receives so much emphasis, Stevenson said, that substantial amounts of time needed for teaching substance are lost to psychological preparation.

Bicouvaris remarked: "The best way for me to elevate the esteem of my students . . . is to teach them that which I was asked to teach. There is no way for me to tell a child that he is great when he knows that he is not. There is no way for me to elevate his self-esteem in any other way but to make sure that I teach him . . . and for him to succeed in it. Then he has the esteem that he needs to have from me."

What Problems Must Be Solved in Educating Teachers for World Class Standards?

Conflicts About Subject Matter Versus Professional Education

Mary Kennedy, Director of the National Center for Research on Teacher Learning, reported that there is a trend nationwide to reduce the amount of professional education preparation that a teacher gets. However, there is great variation among the states, with state requirements ranging from 16 to 72 credits for teacher education. Kennedy noted that the majority of coursework for elementary and secondary teachers is already in arts and science and that simply adding more will not give us the results we are seeking. One problem is that the quality of arts and science curricula varies tremendously by institution; another is that they are often taught by university faculty who are not good teachers.

Kennedy emphasized that having a deep understanding of subject matter is not enough if you cannot connect it to your students. She reported that a longitudinal study of teachers participating in various kinds of teacher education programs revealed some intriguing outcomes.

All the participants could calculate the answer to a problem of dividing a complex number (1 3/4) by a fraction (1/2). The difficulty arose in the participants' ability to devise a story problem that would correctly convey to a student the conceptual sense of multiple halves. There was almost no difference between the kinds of problems generated by people who had majored in mathematics and by those who had not, said Kennedy.

Kennedy reported that studies show that majoring in a specific subject does not guarantee that a new teacher will be able to frame ideas appropriately for children, nor does 10 to 15 years experience in teaching.

"There are problems that are central to teaching, problems that require you to think about the subject, and about the student, and about your instructional goals," Kennedy said. Unfortunately, "we have not yet found a way to help teachers put all those ideas together and learn to think pedagogically about teaching subject matter, to think of students as novices who need guidance and help, without just telling them every time they've got something wrong."

Well-focused teacher education courses can certainly affect teacher outcomes. Even for teachers who have not learned the content well, a relevant course can change attitudes and increase willingness to think about content.

Kennedy also emphasized that teachers must be committed to world class standards, "you can't change the textbook and the assessment if teachers still value the skill and drill kind of teaching."

"Teachers don't discover world class standards on their own, alone in their classrooms. What they discover is how to survive, and how to cope with the system that they're trapped in. The problem is how we help teachers learn to reason about what they're doing, in a world class way, throughout their careers," Kennedy said.

Lee Shulman noted that to improve the quality of teaching, we must apply the idea of quality to both what is taught and how it is taught, "because both serve as potent models in the 'apprenticeship of observation' of future teachers."

Low Standards in Teacher Preparation Programs

Coping with the system is not enough, in Rita Kramer's view, author of *Ed School Follies: The Miseducation of America's Teachers*. "It comes down to whether we have the will to bring about the necessary changes in current teacher training practice. We know what is needed, but not how to get around the interests of entrenched bureaucracies the education school establishment, the teacher's union, the special interest groups . . . the general cultural torpor and lack of respect for intellectual achievement that increasingly characterizes a society dominated by television and the other mass media of communications," Kramer charged.

After a year of visiting schools of education, sitting in on classes, and talking with teachers (prospective and those already in the classrooms), Kramer said she "was led to the inescapable conclusion that we are not educating teachers for world class achievement."

"The kindest thing one can say about most of these programs . . . is that they contribute to the goal of equality of outcome rather than that of opportunity and that they militate against individual achievement. Their result has been a lowering of standards in order that practically everyone be able to pass, to wind up with a degree. In the process, the degree itself has been devalued, and the institutions that grant them have been corrupted," Kramer continued.

"The current, fashionable emphasis on self-esteem, on 'feeling good about oneself,' characterizes much of what I saw in teacher education programs, where it replaces an appreciation of the value of hard work and real achievement. It is part of the transformation of the teacher from instructor in intellectual skills and transmitter of knowledge to a new role. Teachers today are asked to be surrogate parents, baby-sitters, policemen, and therapists," she said.

To change all this, we must raise standards all along the spectrum, from first grade on into college, Kramer emphasized. "It should not be possible to enter college without demonstrating something between familiarity with, and mastery of, the English language and its significant literature; at least one foreign language; scientific language, physical and biological, as well as the history of science; the data of this country's history, as well as the culture and civilization that have defined its institutions."

Kramer called for the reintroduction of competition at every level. "If we want to produce world class learners, we ought to help them acquire the attitude of world class athletes. They don't give up or assume they are just no damn good when they don't win the race. They determine to do better next time," Kramer explained.

"My criticism is not directed at teachers--most of whom do their best to fulfill their obligations and many of whom do more than that--but at the system that so ill prepares them for their task," Kramer concluded.

Poorly Conceived Inservice Education

The teaching environment can modify even the best teacher education, said Willis Hawley of Vanderbilt University. Unless this problem is addressed systemically, it really will not make much difference if we improve teacher preparation significantly, he observed.

"Colleges of teacher education can train people to do anything," he noted. When teachers enter the schools, however, they do not do those things. . . . Even in the most powerful programs, the slippage, the fadeout is pretty high. When teachers enter their classrooms, much of what they have learned dissipates. The typical policy answer to this problem is to give people more practice in field-based courses and in practice teaching. With respect to field-based courses, the evidence suggests that it's counterproductive. There is no convincing evidence that simply extending student teaching in conventional schools makes a whole lot of difference," said Hawley.

Adding programs that aim to "introduce" new teachers to a school has been another policy answer.

"What goes on in those environments has little to do with professional development," he said. "In fact, it legitimates the status quo and provides essentially a survival orientation to beginning-of-the-year teaching. That carries over to a definition of teaching that falls well short of any concept of 'professional' that you or I or teachers themselves would want to endorse," he noted.

According to Hawley, much of inservice education is wrong. It does not connect with what teachers know or are willing to learn at that particular time.

"What we have done is to adopt a policy of learn to earn: you advance financially by taking college credits, and it doesn't matter what you take. Few teachers ever study subject matter that they teach once they leave college, at least not in any great depth, and when they do, they don't have a chance to practice what they've learned," says Hawley.

"Within schools, one seldom finds opportunities for teachers to learn systematically from one another. It is not easy to try new things, to be adventuresome--you can't do it on your own. That means we have to restructure schools accordingly."

Teacher education and professional development should be considered a continuum during the course of a teaching career, Hawley explained.

"What should teacher candidates and teachers be expected to learn at different stages of their professional development, and what institutions are best suited by capacity and culture to provide opportunities for such learning?" Hawley added.

The lack of time in the preservice program is not the only issue, nor is the inadequacy of inservice programs. "It's that we don't have a grasp yet--although we are learning quickly--about what teachers are able to learn at different stages of their development and how the context in which they operate shapes that," he said.

Systemic reform needs to begin with the recognition that most teachers will learn most of what they do experientially, just as most people do, Hawley noted. However, he added, experience is not always a very good teacher.

Supporting much of what was reported by Kennedy, Kramer, and Hawley, Gail Burrill, a classroom teacher at Whithall High School in

Greenfield, Wisconsin, discussed her experiences with administrators who lack insight into the process of teaching.

"Many supervisors do not help teachers understand how children learn," Burrill said. "Some superintendents think that teachers are only worth money if they are in an eyeball situation; eyeball days, eyeball hours," she said. Schools will only get the most out of them if they are kept busy every single minute of every day. Burrill described some places in the country where teachers teach seven different classes in a day and are processing 150 to 200 kids. "There is no way that kids are going to learn anything," she emphasized.

Reinforcing the charge that professional development is not currently recognized as vital to progress in education, Burrill observed, "We are given two days for professional development, and some districts get none." Unless the entire school system comes to value professional development and learning how to teach," said Burrill, "world class standards will not be implemented."

Burrill underscored the need for collaboration in professional development, saying, "There are a whole lot of excellent teachers out there who know what they need, who are willing to work together to make something very effective happen. Unless the collaboration goes from them all the way through those liberal arts professors, it's not going to succeed."

How Will Changes in the Core Subject Areas Affect the Education of Teachers?

Panelists discussed issues related to world class standards that were emerging in specific subject areas and implications for the education of teachers. Subject area associations and state and local curriculum committees are helping to define world class standards for students in the core areas of mathematics, English, science, history, and geography. Other groups are beginning to work for consensus on standards. These new standards are helping those who educate teachers to focus on the most essential knowledge, instructional strategies, and attitudes. They are also helping teachers to better understand what is expected of them.

Reacting to viewpoints from representatives in the core subject areas, Janice Haynes, a demonstration teacher from Bronx, New York, discussed her "wish list" for developing teachers' content knowledge. She would extend the notion of homecoming for graduates of teacher education programs, inviting them back each year to expand not only their content knowledge but to discuss problems experienced during their first years of teaching. She advocated soliciting funding from businesses to support professors to teach content at school sites. In addition, schools should foster professional learning among teachers, encouraging them to learn from teacher specialists in the core subject areas, especially for those who are teaching in disciplines for which they were not prepared.

Issues in Teaching Mathematics

"We have a new view of mathematics and a new view of learning mathematics," said Mary Lindquist of the National Council of Teachers of Mathematics (NCTM). Standards for mathematics education developed by the mathematics community of educators and mathematicians are based on three assumptions:

- All students can and must develop mathematics power--to understand and be able to use math, to make sense of mathematics, and to know its importance.

- Teachers are the key to changing the way mathematics is taught and learned; all teachers can learn to teach mathematics.

- Teachers must have long-time support and adequate resources to make change happen.

In 1991, NCTM published *Professional Standards for Teaching Mathematics,* which addresses teaching, evaluation of teaching, and professional development relative to mathematics. The same year, the Mathematics Association of America also issued *A Call for Change,* a report focusing on the preparation of teachers to teach mathematics.

NCTM standards, explained Lindquist, are driving "a shift toward classrooms as communities and away from classrooms as simply collections of individuals; a shift toward logic and mathematical evidence as verification and away from 'I know the answers and you just have to guess'; a shift toward reasoning and away from mere memorization of procedures; a shift toward conjecturing, inventing, problem solving, and away from simply finding the right answer; a shift toward connecting mathematics--its ideas and applications, and away from isolated bits of learning."

Lindquist also discussed the need to see mathematics as a human endeavor where we look historically at individuals' contributions to mathematics and how real people work with mathematics. This means our teachers will need broader content than algebra or analysis strands to connect mathematics to real world areas. In our "call for change" you don't see algebra alone, you see standards involved with learning, connecting, and communicating mathematical ideas.

Issues in Teaching History

History standards are being developed by the National Center for History in the Schools at the University of California, Los Angeles. Meanwhile, California's statewide History--Social Sciences Framework (the History Project) is focusing discussions on defining world class standards in history.

Key ideas from these discussions were explained by Bill McDiarmid of the National Center for Research on Teacher Learning at Michigan State University.

"Imagine a teacher who has at her disposal the textbook and her own knowledge of history. Another dimension of her knowledge is some idea about what history is as a field of study, as a way in which humankind has tried to understand more about itself. She could view history as a chronicle of political events in the past, or as a struggle on the part of various excluded groups for greater say in the political process and access to resources like jobs and education, or as a debate about the past and what it means, or as all of these things."

"Whichever perspective she takes toward history will shape what and how she teaches," said McDiarmid. Her attempt is to get students to understand that history is a human construct, that history is itself a product of history, that accounts of the past are rewritten, revised, and challenged by each new generation.

"If teachers are to communicate what is vital and exciting about any subject matter area, they need a sense, a feel, for what moves people to do it. In addition, they must be able to think through the kinds of activities, examples, or simulations that are faithful to the history and that engage the variety of students that will be in their classrooms. McDiarmid acknowledged that the traditional organization of universities does not lend itself to both understanding the subject matter and how to transform it. For example, "departments of history teach the substance of history, while departments of teacher education teach pedagogy."

Part of the problem lies in a structure that doesn't reward attention to pedagogy. For example, faculty in arts and science who do work with teacher education are oftentimes penalized. "One of my colleagues in history who does that was told that it was not only a waste of his time, but it was intellectual slumming," said McDiarmid.

Issues in Teaching Science

Scientists, too, are developing consensus on world class standards, according to Shirley Malcom of the American Association for the Advancement of Science.

Malcom emphasized that "teachers have to come to students with a sense of science as a body of knowledge, . . a sense of science as a process, a sense of science and its relationships to everything else that might be within the curriculum . . . the social context of science, science as a part of human culture and human experience, and the role of communication within science.

"The issue is how do we convey the information? How do we convey science as a process? How do we convey the values, methods, and habits of mind of science to a teacher-to-be?" One choice is to look for alternative providers of teacher education, such as science technology centers, Malcom pointed out. Another would be to put teachers-in-training in situations where science is used--"in industrial settings where science is relied upon but not necessarily taught as subject matter, so that you have to learn it embedded in some other process."

Malcom posed another alternative: to connect teachers to scientists and to have them go through the process and live with the problems, the questions, and the discoveries; to come to understand that "science is more about questions than answers, that it is more about finding out than knowing." This understanding "can only be gotten by valuing research as a part of the undergraduate experience or the experience of making a teacher," Malcom stressed.

Another step in improving the science training of teachers, Malcom noted, is to develop more coherence in and connections among college science courses. She called upon education reformers to bring more science faculty to these discussions of what and how science is taught.

Issues in Teaching English

The National Council of Teachers of English is developing a set of standards for teaching English, according to Executive Director Miles Myers, who described three ideas for rethinking the curriculum.

First, "knowledge is negotiated and constructed." Learners construct meaning and build understanding by making connections to what they already know and by anticipating uses for new knowledge. Because each student may take a different path, teachers need to develop a habit of mind in which "everything is interpretable."

Second, "knowledge is distributed." Knowledge exists and occurs not only in one's mind but is also distributed to computers, in notes, in consulting with other people, and so on. World class activities and assessments in English need to include such activities as editing in groups and other forms of collaboration, according to Myers.

And third, "knowledge is situated." The context of language can transform it. For example, in the right context, you could do a literary reading on a classified ad. Teachers need to understand modes, such as narration and persuasion, and how to use them. Myers described each as a different way of thinking, a different way of solving problems.

Another modern skill is what Myers called sign-shifting, learning to shift from visual to print, from one type of speech to another, from speech to print, and so on.

Myers concluded that these developments in English studies are changing the knowledge base that beginning teachers must have.

Issues in Teaching Geography

Recent surveys of American students' knowledge of geography--of both their own country and of the world--have revealed profound inadequacies, according to Terry Smith, consultant to the National Geographic Society.

He cited a 1988 Gallup poll showing that 25 percent of the Americans sampled could not find the Pacific Ocean on a globe; in addition, the United States ranked seventh of the nine nations sampled and last among 18- to 24-year-olds. In fact, the United States was the only country where the oldest cohort (those 55 and older) did better than the youngest cohort (those 18 to 24 who had just finished or were about to finish their formal education).

To improve the teaching of geography, a position paper released in 1991 by the National Council for Geographic Education entitled Pre-Service Teacher Preparation presents minimum standards for teacher preparation in four categories: (1) geography as a general education requirement for all teachers; (2) geography for social studies teachers, including those with a discipline-specific license; (3) geography for elementary and early childhood teachers in self-contained classrooms; and (4) geography within social studies methods courses.

National Geographic's approach to training teachers involves a month-long residential experience that includes submersion in geography, professional treatment of teachers, collegial discussions, problem solving, mentoring, and hands-on and field-trip experiences.

"The most important thing is treating teachers as professionals--encouraging them to share with their colleagues, providing time to think and contemplate and consider adaptations to their own classrooms," noted Smith.

What Changes Are Needed in Policies and Practices that Affect the Education of Teachers?

Study group participants agreed that policies and practices must be changed if teachers are to teach in ways that will enable students to achieve world class standards. Opinions varied, however, on where and how to start making those changes. Not only is teacher education itself more complex now than ever before but the sociocultural, political, and economic contexts in which it must occur are also more demanding. Planning, managing, and organizing instruction for world class standards are more complex than in the past; there is more competition for students' attention and more forces shaping their perceptions. The nature of the learning expected of most students will be more demanding as well.

In synthesizing small group recommendations on needed shifts in policies and practices, Robert Egbert, Distinguished Professor in the Department of Curriculum and Instruction at the University of Nebraska, emphasized that what is vital in the needed changes is what students in teacher education programs "learn about the content in ways that will be useful to them as they teach and think. The content must be taught differently. It must be taught in depth. It must be integrative, flexible, cross-disciplinary, filled with applications."

In addition, Egbert raised several cautions. One was an apparent assumption by some participants of linearity, with no negative unanticipated consequences, between standards and outcomes, however measured. Another was whether we are really more worried about world class standards or about "doing better on achievement tests than other countries do."

Susan Fuhrman, Director of the Consortium for Policy Research in Education at Rutgers University, described the complexities in dealing with systemic reform. She described the current educational system as fragmented, having different levels--federal, state, and local--with separate structures at each level, especially for higher education and for K-12 education. In addition, she said that we need to encourage politicians to coordinate and work together, instead of rewarding specific, narrow constituencies. Fuhrman also advocated that we work on issues of public support to "counter the underlying anti-intellectualism that makes us and the policymakers who represent us undervalue teaching."

Judith Lanier, Dean of Education, Michigan State University, underscored both of these ideas: "Everything, effectively, has to change at once. This is

not a linear problem. . . . We have not figured out the way in which we can work on all parts of the system at once, to get them to change in synchrony and in complementary ways."

During the course of their small group discussions, participants formulated recommendations that included a leadership role for state education agencies in establishing professional and public consensus on world class standards and in raising the quality of preparation and ongoing education for teachers.

They urged districts and schools to develop a community of collective learning that includes parents and education professionals to focus on the meaning, values, and strategies for achieving world class standards, including implications for teacher learning. In addition, they supported local processes for selecting high quality teachers and collaborative, ongoing professional development programs, including mentoring, that strengthen teachers' knowledge of content and pedagogy.

There was strong consensus on the need for institutions of higher education to promote better involvement of arts and science faculty in teacher education, especially in developing strong liberal arts components for prospective teachers, in promoting scholarship on teaching in the disciplines, and on improving teaching throughout higher education.

There were strong roles proposed for professional organizations, especially in involving teachers in all aspects of reform--teaching standards and assessment, teacher education and professional development, and school restructuring. Organizations were asked to promote collaboration and consensus among all groups concerned with education, especially among political groups with conflicting agendas.

It was clear from the discussions that reforming teacher education must occur in the process of reforming schooling.

Will Current Reforms Contribute to the Changes Needed?

While efforts are already under way in some places to change the policies and practices of teacher education, participants acknowledged that changes will not occur simultaneously, in the same way, at the same speed, all around the country.

Reasoned Judith Lanier, however, "If you can't get everything to change everyplace at once, let's get it to happen someplace. Let's use those 'someplaces' as points of strategic learning opportunities for other teachers and for our future education work force."

Participants acknowledged the need to overcome resistance to reforms, especially resistance to external scrutiny of schools of education. Arthur Wise, President of the National Council for the Accreditation of Teacher Education (NCATE), emphasized that until we develop the mechanisms for such scrutiny, "we will remain mired . . . in a field of uncertain reputation." Wise noted that NCATE is a voluntary accrediting association that currently accredits 500 colleges of education, but that there are another 700 or 800 who choose not to take part in the NCATE review process. He emphasized that we must continue to design and implement professional licensing procedures that ensure more integrity to the title "teacher."

Rita Duarte Herrera, a middle school teacher from San Jose, California, described several projects which have been catalysts for change. These include the California International Studies Project, which represents a collegial support system, and the California Curriculum Framework. Herrera said that initially she thought that the new framework was not relevant and that she would not be able to find connections for sixth graders to understand early civilizations. Ultimately, however, she realized the teacher was the key to connecting the more rigorous subject matter to students. However, Herrera added a view of reality in implementing reforms through new standards, noting that because budgets have been cut so drastically in California, she must personally pay for the materials she needs to teach to the new framework.

Panelists described examples of current reform efforts to redesign teacher education programs. These included efforts to raise teaching standards through certification and licensing, to renew teachers already in the work force, to use technology to improve teaching, and to facilitate research about teaching and learning. Other projects or approaches demonstrating promise

for reforming the education of teachers were described as follows by participants:

• **Michigan's Partnership for New Education** has four parts to help spread the influence of the professional development schools, explained Judith Lanier, president of the partnership. The partnership components are (1) the school and university alliance; (2) a business and community alliance; (3) an education extension service; and (4) a leadership academy that brings people together, school by school, to learn about the changes.

"We try to keep this coordination," she explained, "so that the separate, fragmented initiatives . . . begin to see their relationship to one another, to find our points of connection so we can mobilize and work together."

Lanier emphasized that the idea of a professional development school is to bring together research and development and innovation and change with the preparation of the future work force. It is a site where innovation is welcomed, nurtured, and supported. In addition, the Michigan Partnership schools are networked in an effort to create an innovation system.

• **Project 30,** sponsored by Carnegie Corporation of New York, was described by Frank Murray of the University of Delaware and codirector of the project. The project began in 1988, when a group of 30 like-minded representative institutions of higher education pledged to work on the reform of the relationship between education and the liberal arts. Working collaboratively, they addressed five themes: (1) subject matter understanding: issues of how teachers should acquire a more thorough knowledge of the discipline(s) they are licensed to teach; (2) general and liberal knowledge: how teacher education graduates can become well-informed persons, rather than teaching technicians, acquiring the "habits of mind" that have always been claimed for a liberal education; (3) pedagogical content knowledge (an issue that generated the most intense cooperation in arts and science and education faculties): how teacher education students can learn to convert their knowledge of subject matter into teachable subjects for a wide range of students; (4) multicultural, international, and other human perspectives: how college curricula can become more accurate with respect to recent scholarship on race, gender, and ethnic and cultural perspectives; and (5) recruitment into teaching: how to increase the numbers and proportions of under-represented persons--minorities, talented persons, and men and women at all levels of education.

• **The National Board for Professional Teaching Standards** (NBPTS) is developing a system of advanced professional certification for elementary, middle, and secondary school teachers that will begin in the 1993-94 school

year with a national test of the first two certification fields. During the following 4 years NBPTS will bring its entire system of 30 certificates online. National Board Certification will be voluntary, performance-based, and grounded in high and rigorous standards for practice. It will introduce a new generation of assessment methodologies designed to reflect exemplary teaching reliably and accurately.

Lee Shulman commented, "Because teachers will know what is expected and value the outcome--namely, recognition by their peers as board-certified teachers and preference in hiring by school districts--teachers will demand and organize the kinds of professional development experiences that would prepare them for board certification."

• **The National Council for Accreditation of Teacher Education** (NCATE), explained Arthur Wise, has designed national standards for teacher education programs in colleges and universities.

"NCATE has both general standards and special standards for teacher education. It operates a system which takes a comprehensive look at the college of education and then looks specifically at programs which prepare English teachers, math teachers, social studies teachers, science teachers, and more," he said. "NCATE operates a folio review process, through which it reviews colleges of education according to national standards. And, as each of the subject matter organizations revises its approach and develops a new consensus, NCATE incorporates that into the folio review process," Wise noted.

"NCATEs system provides a mechanism to help implement world class standards. As more and more colleges of education participate in NCATEs national accreditation process, more and more teachers will be better prepared to educate students to world class standards," he concluded.

• **The Praxis Series: Professional Assessments for Beginning Teachers**, developed by the Educational Testing Service (ETS) with broad involvement by teachers, teacher educators, and state officials, will be introduced in 1992-93 and will replace the licensing exam now used in 34 states. The Praxis Series consists of three stages. The first assesses basic academic skills at the end of the sophomore year in college, while there is still time to address weaknesses. This stage includes a diagnostic assessment that directs students to computer-based, individualized instruction, according to Gregory Anrig, President of ETS. The second stage focuses on subject knowledge and includes performance assessment. It will incorporate any standards that have been agreed to; for example, National Council of Teachers of Mathematics (NCTM) standards are already used for math assessments. The third stage

assesses classroom performance to provide a link from student teaching to recognition by the National Board for Professional Teaching Standards. The program includes in-class observation, careful training of assessors, and research-based concepts of teaching.

• **Boston University**, explained Carole Greenes, has had success in training teachers by arranging for them to spend summers as apprentices working with curators in museums, working with research mathematicians at the university, working with scientists to investigate problems, and working with literary critics to see how they go about their business.

"Suddenly we have prospective teachers doing something they have never done before," says Greenes. "They stick with a problem until it is resolved or until they recognize that it can't be solved. That's made a great deal of difference in their teaching. They've learned to let kids wrestle with ideas."

• **Technology** is easing access to research on teacher education. The U.S. Department of Education has taken initial steps to develop a computer network called SMARTLINE (Sources of Materials and Research About Teaching and Learning for Improving Nationwide Education) and a distance-learning system called AMERICA ONLINE. SMARTLINE, which is being developed with the help of experts from a broad range of interest groups, will enable people to access information, in a clear and practical way, from various extant sources. The goal of the network is not to duplicate what is already available but to connect with existing systems, guiding seekers to the information they need. The system is expected to provide the nation's first source of "one-stop shopping" for those looking for information about teaching and learning.

Conclusion

World class standards, as applied to teacher education, can provide a source of comfort as well as challenge for those interested in education in America. Greg Anrig pointed out that the promise of world class standards "is that, at last, they can provide a focus and coherence to teacher development, as well as to student instruction. If we agree on the standards, we've got a lot to jump off from," he said.

While the jumping-off point may provide a new perspective for change, it is evident that it also offers new challenges and experiences for everyone involved, from classroom teachers to administrators, from university officials to school board members and parents.

Managing participation by people of various backgrounds and competing interests can complicate cooperation. However, as Rita Duarte Herrera remarked, "Participation builds commitment."

Peter Murrell of Alverno College reinforced a conference theme--focusing on the linkages between the renewal of K-12 schools and the renewal of teacher education. "We cannot look at teacher education separately from the challenges of school renewal," he said. "Standards useful for improving teaching would not only specify skilled pedagogical performances but would also clarify the contexts under which these performances constitute exemplary teaching. We should deepen our understanding of exemplary sites and collaboration among higher education's partners, school people, parents, community members, and other stakeholders," he said.

Despite the need for ongoing discussion and debate on many issues in reforming teacher education, participants seemed to agree that there is renewed urgency about the need to change, and that, at long last, consensus seemed to be an important goal to many of their peers. Robert Egbert underscored this idea: "It may be that we have reached a place where we can work together as teachers and teacher educators, where we can work together as the public and educators."

Concluded OERI Assistant Secretary Ravitch, "The battling that has gone on in American education throughout the 20th century may be behind us. We may be seeing a period of consensus that will lead us to actually accomplish something."

Appendix A

Agenda

OERI STUDY GROUP

ACHIEVING WORLD CLASS STANDARDS: THE CHALLENGE FOR EDUCATING TEACHERS

AGENDA

March 22-24, 1992

Embassy Suites Hotel
1900 Diagonal Road
Alexandria, Virginia
(703) 684-5900

FRAMEWORK FOR DELIBERATIONS

The report, Raising Standards for American Education, recently released by the National Council on Educational Standards and Testing, states:

Most important, student achievement and teacher performance will only change in a dramatic way if existing and future teachers are trained to be able to teach the challenging content in the new national standards.

Study group participants have been invited to assist OERI in examining our nation's capability to educate teachers to teach for the new national standards. They will be asked to examine the extent to which our current systems--including institutions of higher education, in-service programs, and regulatory agencies--are capable of developing teachers with the requisite knowledge and skills for achieving higher standards. Participants will also examine obstacles to change and promising reforms in the education of teachers. Finally, they will formulate recommendations to OERI and to the field on strategies and next steps in strengthening the education of teachers.

Invited participants reflect diverse perspectives on policies and practices affecting the education of teachers. Over an intensive two-day period, they will deliberate and recommend directions needed for educating our nation's teachers. A report of the deliberations will be produced and disseminated by OERI. Prior to the meeting, participants will complete a set of "worksheets" and key readings to guide their thinking and discussion during the meeting. Each participant will be assigned to a work group representing a context for change in teacher education.

MEETING AGENDA

Monday, March 23

8:00-8:30	Coffee and Danish
8:30-9:00	Opening Remarks The Challenge for Teacher Education Diane Ravitch, Assistant Secretary, OERI
9:00-10:30	Issue 1: What Kind of Teaching Do We Need in Order to Achieve World Class Standards? *Panelists will briefly outline their perspectives on this issue; the moderator will synthesize critical issues and lead the discussion.* Carole E. Greenes, Associate Dean, Graduate Programs, School of Education, Boston University Lee Shulman, Professor of Education, Stanford University Harold Stevenson, Director, Program for Child Development and Social Policy, University of Michigan-Ann Arbor
Reactor:	Mary Bicouvaris, Teacher, Hampton Roads Academy, Newport News, Virginia
Moderator:	Michael Timpane, President, Teachers College, Columbia University
10:30-10:45	Break
10:45-12:30	Issue 2: Separating Myth from Reality: What Do We Really Know About Our Capability for Educating Teachers for World Class Standards? *Panelists will describe what we know about the nation's capacity to educate teachers for teaching to world class standards. They will provide evidence about how well our current systems promote rigor and standards in educating teachers.* Panelists: Rita Kramer, author, Ed School Follies: The Miseducation of America's Teachers

Mary Kennedy, Director, National Center for Research on Teacher Learning, Michigan State University

Reactor: Gail Burrill, Teacher, Whithall High School, Greenfield, Wisconsin

Moderator: Willis Hawley, Professor of Education and Political Science, Peabody College, Vanderbilt University

12:30-1:30 Lunch on your own

1:30-3:00 Issue 3: What Additional Issues Need to Be Considered for Teaching in the Core Areas?

Panelists will present issues not emphasized in the morning sessions that may be unique to raising standards in the core areas at the elementary and secondary levels.

Panelists:

Mathematics: Mary Lindquist, President-Elect, National Council of Teachers of Mathematics

History: G. Williamson McDiarmid, Associate Director, National Center for Research on Teacher Learning

English: Miles Myers, Executive Director, National Council of Teachers of English

Science: Shirley Malcom, Head, Directorate for Education and Human Resources Programs, AAAS

Geography: Terry Smith, National Geographic Society

Reactor: Janice Haynes, Teacher, Teacher Trainer, Bronx, New York

Moderator: David Mandel, National Board of Professional Teaching Standards

3:00-evening Issue 4: What Shifts in Policies and Practices Must Occur in the Education of Teachers?

Study group members will convene in work groups to delineate changes within their group's area that must take place in order for current and future teachers to be capable of teaching for world class standards. Reports will be presented in Tuesday morning session.

Tuesday, March 24

8:00-8:30 Coffee and Danish

8:30-10:15 Group Reports and Discussion on Issue 4

Synthesizer: Robert Egbert, George W. Holmes Professor, Department of Curriculum and Instruction, University of Nebraska-Lincoln

10:15-10:30 Break

10:30-12:15 Issue 5: Current Reform Efforts: How Well Will They Facilitate the Shifts? What Else May Be Needed?

Panelists will describe some prominent reform efforts and assess their potential for facilitating the shifts identified across the work groups. In addition, they will describe other change efforts that may be needed in order to bring about significant changes in the way teachers are educated.

Panelists:

Judith Lanier, President of the Holmes Group and member of the National Academy of Education

Gregory Anrig, President, Educational Testing Service

Arthur Wise, Director, National Council for Accreditation of Teacher Education

Reactor: Rita Duarte Herrera, Teacher, Ocala Middle School, San Jose, California

Synthesizer: Susan Fuhrman, Director, Consortium for Policy Research in Education, Rutgers University

12:15-2:45 Study Group Working Lunch

Issue 6: Getting from Here to There: Strategies for Implementing Needed Changes in the Education of Teachers

Study group members will convene in their work groups and consider the following issues in relation to their assigned areas:

- *What barriers must we overcome before significant changes can be made in the way we educate teachers?*
- *What are the points of entry for making significant changes? (e.g. regulatory bodies, standards, etc.)*
- *What overall strategies are likely to work best in facilitating change?*
- *What role(s) are appropriate for the federal government to play in contributing to needed changes?*
- *What should OERI do in the areas of research, practice improvement, and dissemination to facilitate change?*

2:45-3:00 Break

3:00-4:30 A Report to OERI/ED Leaders

The OERI Assistant Secretary, major OERI program heads, and representatives of key programs will assemble to listen to summaries of reports from the groups on the key issues above and to ask questions about their findings and deliberations.

Appendix B

Speaker and Participant List

Speaker and Participant List
1992 OERI Study Group
March 22-24, 1992

Gregory Anrig, President
Educational Testing Service
Rosedale Road
Princeton, NJ 08541

Mary V. Bicouvaris
U.S. Government/International Politics Teacher
Hampton Roads Academy
739 Academy Lane
Newport News, VA 23602

Don Bowen
American Association of State Colleges
and Universities
1 Dupont Circle NW
Suite 700
Washington, DC 20036

Gail Burrill
Teacher
Whithall High School
5000 South 116th Street
Greenfield, WI 53228

Mary Butz
Associate Director
Educational Issues Department
American Federation of Teachers
555 New Jersey Avenue NW
Washington, DC 20201

Gloria Chernay
Executive Director
Association of Teacher Educators
1900 Association Drive
Reston, VA 22091

Robert Egbert
Professor
Department of Curriculum and Instruction
University of Nebraska
Lincoln, NE 68588-0355

Emily Feistritzer
Director
National Center for Education Information
4401A Connecticut Avenue NW, Suite 212
Washington, DC 20008

Joni Finney
Director, Policy Studies
Education Commission of the States
707 - 17th Street, Suite 2700
Denver, CO 80202-3427

Robert Floden
Michigan State University
516 Erickson Hall
East Lansing, MI 48824

Susan Fuhrman
Director
Consortium for Policy Research in
Education
Rutgers University
Woodlawn Neilson Campus
Clifton Avenue
New Brunswick, NJ 08903-0270

Carole E. Greenes
Associate Dean, Graduate Programs
Professor of Mathematical Education
School of Education
Boston University
605 Commonwealth Avenue
Boston, MA 02215

Mary Harbaugh
55 Winslow Road
Belmont, MA 02178

Willis Hawley
Professor of Education and
Political Science
Vanderbilt Institute for Public Policy Studies
1208 - 18th Avenue South
Nashville, TN 37212

Janice Haynes
Teacher
CIMS/CA Project
New York City Public Schools
3740 Baychester Avenue
Bronx, NY 10466

Rita Duarte Herrea
Teacher
Ocala Middle School
2800 Ocala Avenue
San Jose, CA 95148

Nick Hobar
Assistant State Superintendent
for Instruction
Maryland State Board of Education
200 West Baltimore
Baltimore, MD 21201

Ginger Hovenic
Director
Clear View Professional
Development Schools
455 Windrose Way
Chula Vista, CA 91910

David Imig
Executive Director
American Association of Colleges
for Teacher Education
1 Dupont Circle NW, Suite 610
Washington, DC 20036-1186

Eugenia Kemble
Assistant to the President
Director of Educational Issues
American Federation of Teachers
555 New Jersey Avenue NW, 12th Floor
Washington, DC 20201

Mary Kennedy
Director
National Center for Research on
Teacher Learning Education
116 Erickson Hall
Michigan State University
College of Education
East Lansing, MI 48824

Leo Klagholz
Director
Teacher Preparation & Certification
New Jersey Department of Education
CM 500
225 West State Street
Trenton, NJ 08625-0500

Dale Koepp
Deputy Director
National Leadership Program
Woodrow Wilson National Fellowship
Foundation
330 Alexander Street
Princeton, NJ 08540

Rita Kramer
Author
320 Central Park West, #14A
New York, NY 10025

Benjamin Ladner
The Delta Teachers Academy
The National Faculty
1676 Clifton Road
Atlanta, GA 30322

Judith Lanier
Dean, College of Education
Michigan State University
501 Erickson Hall
East Lansing, MI 48824

Guy Larkins
Professor of Social Science Education
University of Georgia
412 Tucker Hall
Athens, GA 30602

Miriam Leiva
Director, Teacher Preparation Program
National Science Foundation
1800 G Street NW, Room 635
Washington, DC 20550

Jane Leibbrand
National Council for the Accreditation
of Teacher Education
2010 Massachusetts Avenue NW
Washington, DC 20036

Mary Lindquist
President
National Council of Teachers of Mathematics
Department of Mathematics
School of Education
Columbus College
Columbus, GA 31993

A. Robert Lynch
Social Studies Teacher
Jericho High School
Cedar Swamp Road
Jericho, NY 11753

Shirley Malcom
Head, Directorate for Education and Human Resources Programs
American Association for the Advancement of Science
1333 H Street NW
Washington, DC 20005

David R. Mandel
Vice President for Policy
Development
National Board for Professional
Teaching Standards
1320 - 18th Street NW, Suite 401
Washington, DC 20036

G. Williamson McDiarmid
Michigan State University
College of Education
116-L Erickson Hall
East Lansing, MI 48824-1034

Jean McDonald
National Governors Association
444 North Capitol Street NW
Washington, DC 20001

Maia Pank Mertz
Professor of English Education
Ohio State University
1366 Oakborne Drive
West Worthington, OH 43235

Jean Miller
Director
Teacher Education and Assessment Consortium
Council of Chief State School Officers
1 Massachusetts Avenue NW
Washington, DC 20001-1431

Laurie Molina
Project Director
Geography Academy for Teachers
361 Belmany
Tallahassee, FL 32306

Frank Murray
Dean's Office
College of Education
University of Delaware
Newark, DE 19716-2901

Peter Murrell
Assistant Professor
Depts. of Education & Psychology
Alverno College
3401 South 39th Street
Milwaukee, WI 53215

Miles Myers
Executive Director
National Council of Teachers of English
11 Kenyon Road
Urbana, IL 61801

Karen O'Connor
Executive Director
Massachusetts Field Center for Teaching
and Learning
Wheatley Hall
University of Massachusetts/Boston
100 Morrissey Boulevard, 3d Floor
Boston, MA 02125-3393

P. David Pearson
Dean, College of Education
University of Illinois-Urbana/Champaign
1310 South 6th Street
Champaign, IL 61821

Arlene Penfield
President
National School Boards Association
328 Lake Street
Rouses Point, NY 12979

Elaine Reed
Executive Director
National Council on History Education
26915 Westwood Road, Suite B2
Westlake, OH 44145

Virginia Roach
National Association of State Boards of Education
1012 Cameron Street
Alexandria, VA 22314

Sharon Robinson
National Education Association
1201 16th Street NW
Washington, DC 20036

Adam Scrupski
Associate Professor
Office of Teacher Education
Rutgers University
10 Seminary Place
New Brunswick, NJ 08903

Judy Shulman
Far West Laboratory for Educational
Research and Development
730 Harrison Street
San Francisco, CA 94107-1242

Lee Shulman
Professor
Stanford University
School of Education
Ceras 507
Stanford, CA 94305-3084

Terry Smith
National Geographic Society
1145 - 17th Street NW
Washington, DC 20036

Roger Soder
Center for Educational Renewal
University of Washington
Miller Hall DQ12
Seattle, WA 98195

Ann Stephanie Stano, SSJ
Dean, School of Education
Gannon University
2551 West 8th Street
Erie, PA 16505

Harold Stevenson
Director
Program in Child Development & Social Policy
University of Michigan
300 North Engalls, 10th Level
Ann Arbor, MI 48109

Michael Timpane
President
Teachers College
Columbia University
525 West 21st Street
New York, NY 10027

Arthur Wise
President
National Council for the Accreditation
of Teacher Education
2010 Massachusetts Avenue NW, Suite 200
Washington, DC 20036

Nancy Zimpher
Professor and Associate Dean
Ohio State University
149 Arps Hall
1945 North Street
Columbus, OH 43210

U.S. Department of Education
Office of Educational Research and Improvement

Francie Alexander
Deputy Assistant Secretary for Policy and Planning

Ed Argenbright
Director, Recognition Division

Elizabeth Ashburn
Office of Research

John C. Egermeier
Educational Networks Division

Terri Ferindi
Office of the Assistant Secretary

Paul Gagnon
Director, Fund for the Improvement of Postsecondary Education

Sharon Horn
Programs for the Improvement of Practice

Joanne Hughes
Programs for the Improvement of Practice

Carole LaCampagne
Office of Research

Barbara Lieb
Director, Research Applications Division

David Mack
Director, Educational Networks Division

Barbara Marenus
National Center for Education Statistics

Joyce A. Murphy
Office of Research

Stephen O'Brien
Recognition Division

Kathy Price
Outreach Division

Jeannette Randolph
Office of the Assistant Secretary

Diane Ravitch
Assistant Secretary

Patricia O'Connell Ross
Research Applications Division

Joseph Vaughan
Research Applications Division

Acknowledgments

Producing this report and convening the meeting on which it is based required the expertise, time, and commitment of many people in the Office of Educational Research and Improvement (OERI) and in institutions, organizations, and agencies concerned with educating teachers.

Several OERI colleagues provided major assistance in planning and implementing the meeting. Special gratitude and thanks are extended to Elizabeth Ashburn, Paul Gagnon, Carole Lacampagne, Patti Mitchell, and Joyce Murphy for their help in developing the substance and format for the meeting. Thoughtful suggestions for meeting participants were also provided by Joseph Vaughan, Jean Narayanan, Steve O'Brien, and Mary Lewis Sivertsen. Gloria Herbert and Billie Norris provided expert logistical support and attended to the myriad of details required in planning the meeting and preparing the report. Sharon Horn of OERI and Meg Slentz Nagy of Westover Consultants were reliable, energetic, and flexible in their efforts to see that the meeting ran smoothly.

Diane Ravitch, former Assistant Secretary of the Office of Educational Research and Improvement and Counselor to the Secretary, helped the study group shape and keep in focus the theme of the meeting. Francie Alexander, former Deputy Assistant Secretary for Policy and Planning, provided the context for systemic, standards-based reform. Helpful comments on drafts of the report were provided by meeting participants and by several OERI staff, including Theodor Rebarber, Office of the Assistant Secretary, and Eve Bither, Director of the Office of Programs for the Improvement of Practice.

Finally, we extend special thanks to the participants, most of whom spent 2 intensive days in plenary sessions and small group discussions thinking about ways the nation should educate its teachers to meet the goals of systemic reform.

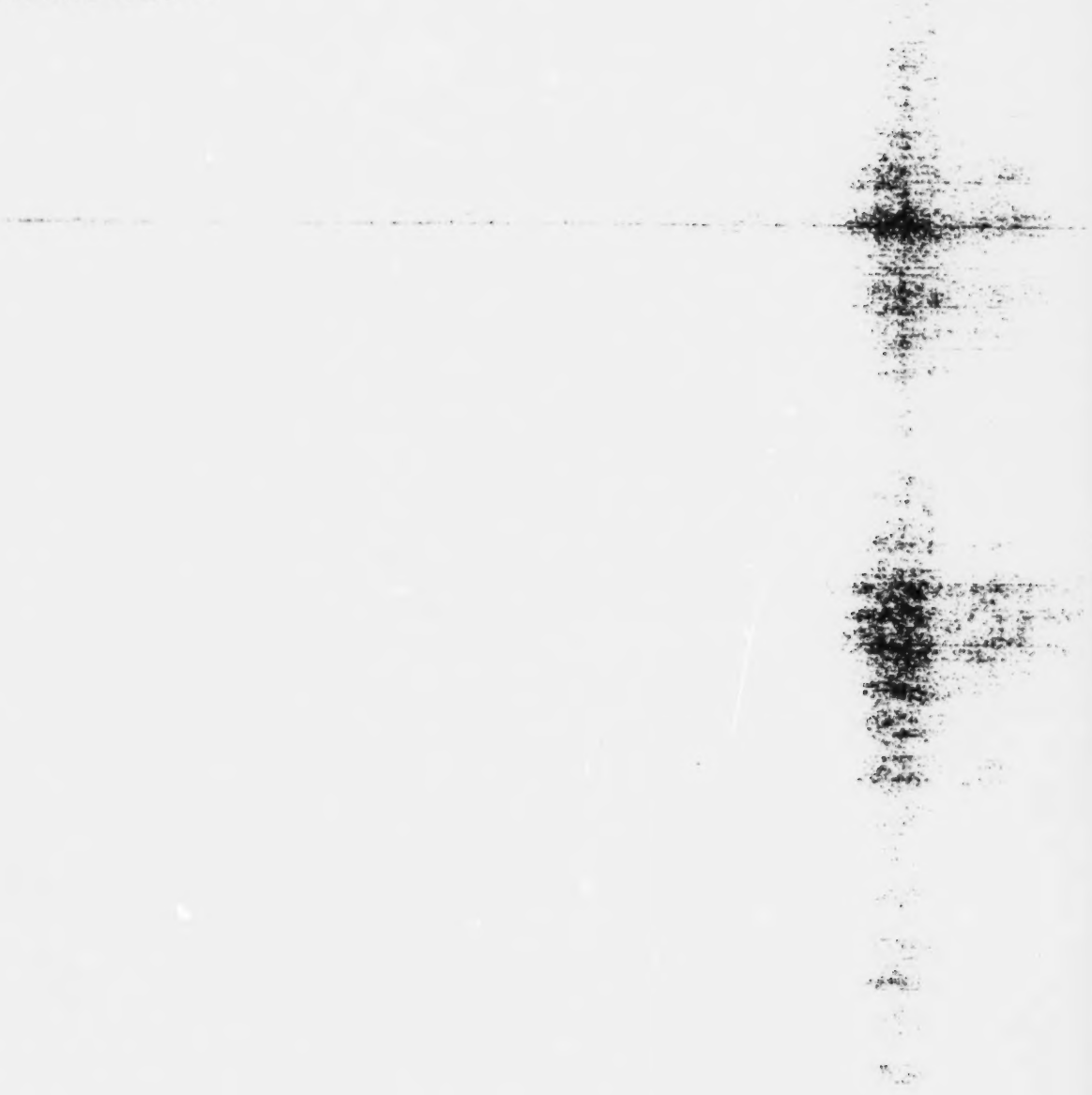
ISBN 0-16-041698-1

UNITED STATES
DEPARTMENT OF EDUCATION
WASHINGTON, D.C. 20208-5643

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
U.S. DEPARTMENT OF EDUCATION
PERMIT NO. G-17

FOURTH CLASS



BEST COPY AVAILABLE

PIP 93-1217